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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,917	12/20/2000	Ronaldus Maria Aarts	PHN 17,834	9594

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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EXAMINER

HARPER, V PAUL

ART UNIT PAPER NUMBER

2654

DATE MAILED: 12/17/2004

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**MAILED**

**DEC 17 2004**

**Technology Center 2600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/741,917  
Filing Date: December 20, 2000  
Appellant(s): AARTS ET AL.

Edward W. Goodman  
PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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BRIARCLIFF MANOR, NY 10510  
For Appellant

This is in response to the appeal brief filed 12/02/2004.

### **EXAMINER'S ANSWER**

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Claimed Subject Matter***

The summary of claimed subject matter contained in the brief is correct.

**(6) *Grounds of Rejection to be Reviewed on Appeal***

The appellant's statement of the grounds of rejection is correct.

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**(7) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) *Prior Art of Record***

Masaharu et al. Japanese Patent Publication 09-114479 (Feb 05 1997).

Atsushi et al., Japanese Patent Application Publication 07-056497 (March 03, 1995).

**(9) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaharu et al. (Japanese Patent Application Publication JP 09114479A), hereinafter referred to as Masaharu, in view of Atsushi et al. (Japanese Patent JP 07056497A).

Regarding claim 2, Masaharu discloses a sound field reproducing device with the following features: **“input means for receiving combined speech and music signals on n input channels, n being an integer”** (English abstract, ¶0011 voice and non-voice signal acquisition); **“separating means for substantially separating the speech and music signals”** (English abstract, ¶0015 voice signal is extracted from inputted stereo); **“combination means for combining the modified speech signals and the music signals, and for outputting the combination modified speech and music signals on m output channels, m being an integer”** (English abstract, adding circuit 14, and ¶0013, addition means mentioned in last sentence).

In addition, Masaharu discloses a field expansion means that can orientate an image using sound effects to arbitrary positions in space (¶0014), but Masaharu does not specifically teach that **“signal direction detection means for ascertaining a direction from which the speech signals; converter means for converting the speech signals in accordance with a desired virtual change in the direction from which the speech signals can be heard, said converter means forming modified speech signals.”**

However, the examiner contends that this concept was well known in the art, as taught by Atsushi (where the references indicate that this art requires a high level of skill).

In the same field of endeavor, Atsushi discloses voice virtual location system that locates a voice inputted to a microphone (with position data) and then relocates the voice to a position in virtual space (with virtual data) (English abstract, ¶'s 0005-0007).

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Masaharu by specifically providing signal direction means both inputted and virtual, as taught by Atsushi, to generate a more realistic voice representation (¶'s 0004-0005).

Regarding claim 3, Masaharu in view of Atsushi teaches everything claimed, as applied above (see claim 2). But Masaharu in view of Atsushi does not specifically teach **“the converter means comprises one or several additional input channels for receiving speech and position signals can be supplied from a microphone having position recording means.”** However, the examiner contends that this concept was well known in the art, as taught by Atsushi.

Atsushi further discloses that the system locates the voice inputted to the microphone (English abstract, ¶ 0006).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Masaharu in view of Atsushi by specifically providing signal direction means, as taught by Atsushi, to generate vocal positioning for a more realistic effect (¶'s 0005 and 0006).

Regarding claim 4, Masaharu in view of Atsushi teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **“sound reproduction means for reproducing amplified speech and music signals”** (English abstract,

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¶0015, last sentence in particular where it states that the output signal is emitted as sound by two or more speakers with necessary output channels).

Regarding claim 5, Masaharu teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **“with a unit including a picture screen and sound reproduction means are incorporated”** (¶0002, sound system and big screen combined).

Regarding claim 6, Masaharu teaches everything claimed, as applied above (see claim 2). In addition, Masaharu discloses **“further converter means coupled to said separation means for converting the music signals, in accordance with a desired virtual spatial widening, into widened music signals, said widened signals being combined with said modified speech signals in said combination means”**

(English abstract, reflection sounds are added to the outputted signals, and ¶0014, sound field expansion).

#### **(10) Response to Argument**

a) Appellant asserts beginning on page 5:

Appellants submit that the Examiner has not met the criteria to establish a prima facie case of obviousness. In particular, the Examiner states, in commenting on the applicability of Masaharu et al. to the invention as claimed in claim 2, “combination means for combining the modified speech signals and the music signals, and for outputting the combination modified speech and music signals on m output channels, m being an integral (emphasis added). However, in actuality, Masaharu et al. merely

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discloses devices for separating the voice components of the combined signal (voice signal eliminating circuit 12 and voice extracting circuit processing the voiceless resultant signal, for example, for widening (sound field expanding circuit 15), and then re-inserting the (unprocessed) voice components (adding circuit 16) such that the voice components are not subjected to the widening processing. Masaharu et al. neither discloses nor suggests any form of processing of the separated voice components.

As stated in the rejection of claim 2, above, Atsushi teaches the modification of the speech signal (§ 0005-0007) and Masaharu teaches the separating followed by combining of the speech and music signals (abstract, § 0013). Furthermore, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

b) Appellants assert on page 6:

Hence, Appellants submit that there is no suggestion or motivation to modify Masaharu et al. to combine therewith the teachings of Atsushi et al. Appellants believe that the only place such a suggestion could have come is the subject invention, which is indicative of impermissible hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the



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applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, the further processing of the speech signal is motivated by Atsushi who states that such processing of a speech signal "raises the reality of a virtual space" (¶ 0005), and where there is a motivation to combine references, there is not hindsight reasoning.

c) Appellants assert on page 7:

Furthermore, Appellants believe that Atsushi et al. *is not art analogous to that of Masaharu et al.* In particular, Masaharu et al. relates to a device for reproducing a sound field having a range equal to or wider than that in the conventional practice without impairing the clarity of voice signals, by extracting the voice signals, processing the voiceless signals, and then re-inserting the voice signals. This would be done in the case of music or television in order to enhance the listening experience. Atsushi et al., on the other hand, is concerned with the placement of voice sounds in a virtual field which would be used in, for example, a multiple player virtual reality game simulator. Appellants submit that one skilled in the art would not look to the virtual reality gaming field to further enhance the listening experience as disclosed in Masaharu et al. (italics added)

For a reference to be analogous art it must be either in the same field of endeavor or pertinent to the particular problem (MPEP 2141.01(a), *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)). In this case, the references meet both criteria. Masaharu and Atsushi are in the field of audio signal processing (Masaharu's disclosure has the title "Sound field reproducing device" and Atsushi's disclosure has the title "Voice virtual location system"), and both Masaharu and Atsushi teach the processing of audio for entertainment related applications (see the corresponding abstracts). Furthermore, the teachings of Atsushi solve a problem for

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Masaharu (i.e., improving the perceived reality of the generated speech) (Atsushi ¶0005).

d) Appellants assert on page 7:

Appellants commend the Examiner for being able to read Japanese. However, Appellants do not have such talents. Appellants had provided the Examiner with only the English Abstract of Masaharu et al. However, the Examiner has not provided Appellants with any English translation of Masaharu et al. to enable Appellants to ascertain the exact content of Masaharu et al. Hence, Appellants are not able to judge what are the contents of paragraph 0014.

The Examiner thanks the Appellants for the compliment on his linguistic ability but has to stand in equal awe at the Appellants detailed response (paper # 14, received on 04/05/2004) to the original office action apparently without a complete translation. It is felt that the English translation of the abstract teaches the key aspects of Masaharu invention used in the rejection and the complete translation adds clarification. To further support the rejections and arguments, complete translations of both the Masaharu and the Atsushi documents are included in the appendix of this document.

e) Applicant asserts on page 8:

Notwithstanding the above, it should be kept in mind that Masaharu et al. concerns the processing of the music portion of the sound signal and not the voice portion. Hence, any steering done by Masaharu et al. is to the music portion. In fact, Masaharu et al. extracts the voice portion prior to processing such that the processing does not affect the voice portion.

See a), above.

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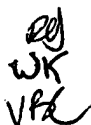
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

V. Paul Harper  
December 2, 2004



Conferees  
Richemond Dorvil  
William Korzuch  
Vijay Chawan



**RICHEMOND DORVIL**  
**SUPERVISORY PATENT EXAMINER**

(appendix attached)